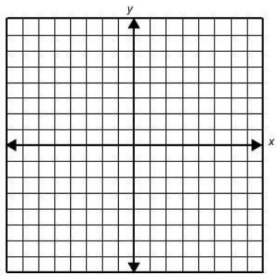
Algebra 2
Review: Graphing Quadratics

Name: _____
Date: _____ Pd: ___

1.) Graph $y = x^2 + 6x + 5$

Axis of symmetry: _____
Vertex: _____
Vertex Form: _____
Direction of Opening: _____
y-intercept: _____
x-intercepts: _____, _____



2.) Graph $y = x^2 - 2x + 5$

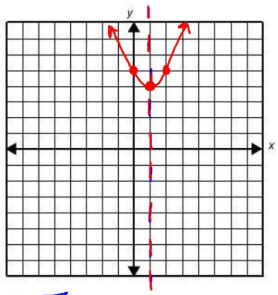
$a=1 \quad b=-2 \quad c=5$

Axis of symmetry: $x=1$ $\quad \frac{2}{2(1)} = \frac{2}{2}$
Vertex: $(1, 4)$
Vertex Form: $y=(x-1)^2+4$
Direction of Opening: up $a\oplus$
y-intercept: $(0,5)$
x-intercepts: none

$(1)^2 - 2(1) + 5 = 4$

yint: $x=0$
$(0)^2 - 2(0) + 5$

xint: $y=0$
$0 = x^2 - 2x + 5$
$\frac{2 \pm \sqrt{(-2)^2 - 4(1)(5)}}{2(1)} = \frac{2 \pm \sqrt{-16}}{2}$
not real → none



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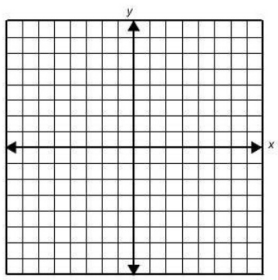
3.) Graph $y = -\frac{1}{2}(x-3)^2 + 2$

Axis of symmetry: _____
Vertex: _____
Direction of Opening: _____
y-intercept: _____
x-intercepts: _____, _____

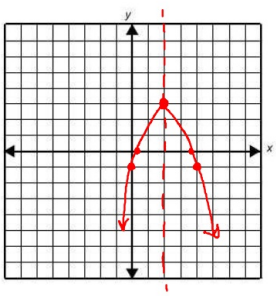


Vertex
4.) Graph $y = -(x-2)^2 + 3$ $\quad a=-1$
$h=2 \quad k=3$

Axis of symmetry: $x=2$
Vertex: $(2,3)$
Direction of Opening: down
y-intercept: $(0,-1)$
x-intercepts: $(3.7,0)$, $(.3,0)$

yint: $x=0$
$-(0-2)^2+3$
-1
$(0,-1)$

xint: $y=0$
$0 = -(x-2)^2 + 3$
$-3 = -(x-2)^2$
$\sqrt{3} = \sqrt{(x-2)^2}$
$\sqrt{3} = x-2$
$1.7 = x-2$
$3.7 = x$



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5.) Graph $y = x^2 + 4x + 1$

$a=1$ $b=4$ $c=1$ $\frac{-4}{2(1)}$

Axis of symmetry: $x=-2$

Vertex: $(-2,-3)$

Vertex Form: $y=(x+2)^2-3$

Direction of Opening: up $a\oplus$

y-intercept: $(0,1)$

x-intercepts: $(-.2,0)$, $(-3.7,0)$

$(-2)^2+4(-2)+1$

-3

$(-2,-3)$

y int: $x=0$

$(0)^2+4(0)+1$

x int: $y=0$

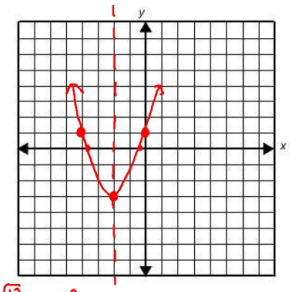
$0=x^2+4x+1$

$\frac{-4\pm\sqrt{4^2-4(1)(1)}}{2(1)}$

$\frac{-4\pm\sqrt{12}}{2}$

$\frac{-4+\sqrt{12}}{2}=-.2$

$\frac{-4-\sqrt{12}}{2}=-3.7$



6.) Graph $y = 2(x-1)^2 - 8$

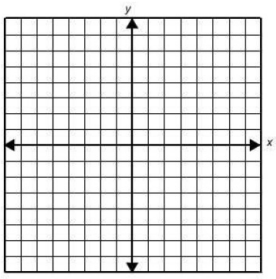
Axis of symmetry: _____

Vertex: _____

Direction of Opening: _____

y-intercept: _____

x-intercepts: _____, _____



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7.) Graph $y = -2x^2 - 8x + 9$

Axis of symmetry: _____

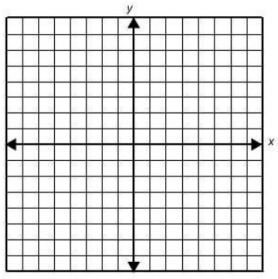
Vertex: _____

Vertex Form: _____

Direction of Opening: _____

y-intercept: _____

x-intercepts: _____, _____



8.) Graph $y = \frac{1}{2}(x+3)^2 - 4$

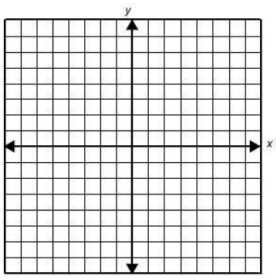
Axis of symmetry: _____

Vertex: _____

Direction of Opening: _____

y-intercept: _____

x-intercepts: _____, _____



Homework!

finish #1, 3, 6 in packet.